

Armstrong Brothers Tool Co.
Chicago, Illinois
in the 1901 catalog of
Crawley & Johnston
Cincinnati, Ohio

Armstrong Patent Tool Holders

ESPECIALLY ADAPTED FOR THE ECONOMICAL USE OF SELF-HARDENING STEEL.

ARMSTRONG BORING TOOL

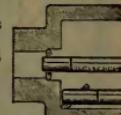
Patented March 12th, 1895.



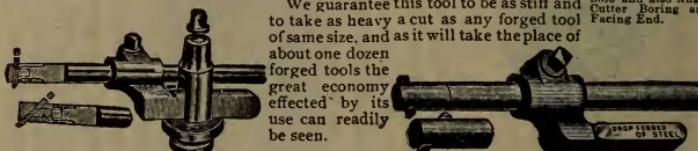
Showing tool cutting a thread.

This tool is made entirely of steel, the wearing parts are hardened and it is finished in a first-class manner. The bar can be extended from its holder to any desired length to suit depth of hole. The cutters can be ground for V. or square thread, double end, round nose, or any desired shape. They can easily be made by simply grinding end of piece of self-hardening steel to the proper shape on a dry emery wheel, then nick all around on corner of stone and break off with sharp blow of hammer.

We guarantee this tool to be as stiff and to take as heavy a cut as any forged tool of same size, and as it will take the place of about one dozen forged tools the great economy effected by its use can readily be seen.



The above cut shows the Single Ended Cutter roughing out a bored hole and also Angle Cutter Boring and Facing End.



Each set is put up in a substantial box and consists of holder and bar with straight and 45 degree end caps, two cutters, (ground for boring), wrench and a piece of Self-Hardening Steel for extra cutters.

No.	SIZE SHANK.	DIAM. BAR.	SIZE CUTTER.	NET WEIGHT.	PRICE COMPL'T.	EXT. CUTTERS. Gr'd for Boring
8	$\frac{5}{8} \times \frac{3}{8}$ in.	$\frac{7}{8}$ inch	$\frac{1}{8}$ in. sq.	2 lb. 0 oz.	\$ 3.00	\$.12 each
9	$\frac{5}{8} \times 1$ "	$\frac{7}{8}$ "	$\frac{1}{4}$ "	4 " 0 "	3.60	.15 "
10	$\frac{5}{8} \times 1\frac{1}{2}$ "	$\frac{7}{8}$ "	$\frac{1}{2}$ "	7 " 5 "	4.75	.20 "
11	$\frac{5}{8} \times 1\frac{1}{2}$ "	$1\frac{1}{2}$ "	$\frac{3}{8}$ "	12 " 5 "	6.75	.30 "
12	$\frac{5}{8} \times 1\frac{1}{2}$ "	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	17 " 12 "	10.00	40 "

ARMSTRONG BORING TOOL ADAPTED TO USE IN LARGE LATHES WITH CLAMP TOOL REST.

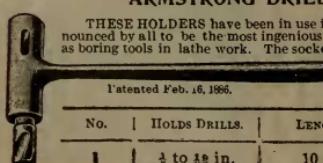


Each set is put up in a substantial box and consists of shank and bar with straight and 45 degree end caps, two cutters, ground to shape, wrench and a piece of Self-Hardening Steel for extra cutters.

No.	SIZE SHANK.	DIAM. BAR.	L'GTH BAR	SIZE CUTTER.	NET WGT.	PRICE COMP.	EXT. CUTTERS. Gr'd for Boring
15	$1\frac{1}{8} \times 2\frac{1}{2}$ in.	$1\frac{1}{8}$ in.	18 in.	$\frac{7}{8}$ inch.	17 lbs.	\$ 8.75	\$0.40 each.
16	$1\frac{1}{8} \times 2\frac{1}{2}$ "	$1\frac{1}{8}$ "	21 "	$\frac{1}{2}$ "	25 "	10.50	.50 "
17	$2\frac{1}{8} \times 2\frac{1}{2}$ "	$1\frac{1}{8}$ "	24 "	$\frac{1}{2}$ "	38 "	13.75	.70 "

ARMSTRONG DRILL AND REAMER HOLDER

THESE HOLDERS have been in use in many large machine shops for years and have been pronounced by all to be the most ingenious and practical method of utilizing twist drills and reamers as boring tools in lathe work. The sockets are Morse standard taper. Holding drills by means of lathe dogs or other temporary or makeshift methods usually results in broken drills and loss of time, and this drill holders are especially designed to avoid. EACH TOOL IS PACKED IN A NEAT BOX.



Patented Feb. 16, 1895.

No.	HOLDS DRILLS.	LENGTH.	WEIGHT.	PRICE.
1	$\frac{1}{4}$ to $\frac{1}{8}$ in.	10 in.	1 lb. 12 oz.	\$0.90
2	$\frac{5}{32}$ to $\frac{3}{16}$ in.	12 "	2 lb. 9 oz.	1.20
3	$\frac{13}{32}$ to $\frac{1}{2}$ in.	14 "	4 lb. 8 oz.	1.60
4	$\frac{13}{32}$ to $\frac{3}{4}$ in.	16 "	7 lb. 8 oz.	2.60
5	$2\frac{1}{8}$ to $\frac{3}{4}$ in.	20 "	14 lb. 8 oz.	4.00

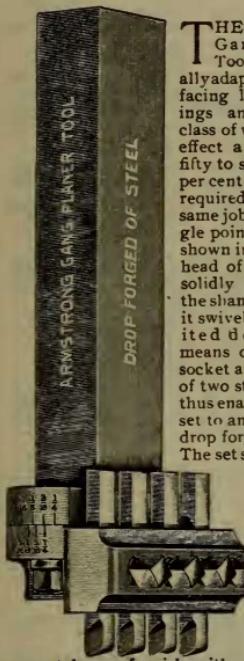
Armstrong Patent Tool Holders

ESPECIALLY ADAPTED FOR THE ECONOMICAL USE OF SELF-HARDENING STEEL.

THE ARMSTRONG GANG PLANER TOOL.

(PATENT ALLOWED)

MADE IN THREE SIZES, ADJUSTABLE TO DIFFERENT FEEDS.



THE Armstrong Gang Planer Tool is especially adapted for surfacing large castings and on this class of work it will effect a saving of fifty to seventy-five per cent in the time required to do the same job with a single point tool. As shown in Fig. 1 the head of the tool is solidly secured to the shank, on which it swivels to a limited degree, by means of a deep and closely fitted tongue and socket and when set its position is fixed by means of two steel collar screws. The head is graduated thus enabling the tool to be quickly and accurately set to any desired feed. Both shank and head are drop forged of steel and all parts are hardened. The set screws are tool steel tempered on the point.

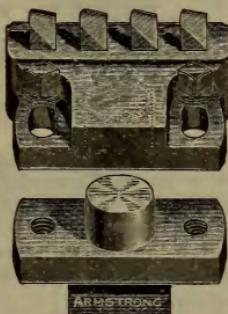


FIG. 1.



FIG. 2.

Fig. 2 shows a cut taken with the No. 61 Gang Planer Tool set to $\frac{1}{8}$ inch feed, distributing the cut $\frac{1}{16}$ inch on each cutter. Each chip being comparatively light a planer with this tool will carry with ease a feed and depth of cut much greater than would be possible when using an ordinary tool and there is moreover much less tendency to "break out" at the end of cut.

The cutters are made from stock sizes and shapes of self-hardening steel which are readily obtainable. In grinding cutters it is of course necessary to obtain uniformity of shape and clearance. To enable this to be done easily and accurately we furnish with each tool a gauge which will be found of great assistance in grinding cutters to proper shape to give best results. To line up cutters to uniform depth it is only necessary to let them rest on a flat surface while tightening set screws.

PRICE LIST.

Each tool is packed in a neat box, and the following price includes one set of self-hardening steel cutters ground to shape, one gauge for grinding cutters and one wrench carefully fitted.

NO.	SIZE SHANK	LENGTH OVER ALL	SIZE CUTTER	FEED ADJUSTMENT	WEIGHT	PRICE COMPLETE	EXTRA CUTTERS
61	$1\frac{1}{2} \times 1\frac{1}{4}$ in.	10 in.	$\frac{5}{8} \times \frac{1}{2}$ in.	0 to $\frac{1}{2}$ in.	10 lbs.	\$12.00	\$0.85
62	$1\frac{1}{2} \times 2\frac{1}{2}$ "	12 "	$\frac{1}{2} \times \frac{5}{8}$ "	0 to $\frac{3}{8}$ "	17 "	20.00	.60
63	$2 \times 2\frac{1}{2}$ "	14 "	$\frac{5}{8} \times \frac{3}{4}$ "	0 to $\frac{1}{2}$ "	31 "	35.00	.90

Armstrong Patent Tool Holders

ARMSTRONG THREADING TOOL

SIMPLICITY, STRENGTH AND PERMANENCE OF ADJUSTMENT ARE PROMINENT FEATURES OF THIS TOOL.



Patent applied for.

Some good points of the Armstrong Threading Tool

It will work close up to a shoulder.
It has very few parts.
Cutter is *backed off* and gives perfect
clearance.
Forging is entirely dispensed with.
The use of this tool will effect a
marked reduction in bills for tool
steel and insures cutting threads of
UNIFORM ANGLE.



CUTTERS FURNISHED.

WE MAKE AND CARRY IN STOCK SINGLE POINT AND CHASING CUTTERS TO CUT THE PITCHES LISTED BENEATH, IN SHARP V, WHITWORTH AND UNITED STATES STANDARD THREADS.

Single Point Cutters.

SIZE TOOL.	PITCHES.
No. 50	6 to 20 threads per inch.
No. 51	5 to 20 "
No. 52	4 to 20 "
No. 53	3 to 20 "

SIZE TOOL.	PITCHES.
No. 50	14, 16, 18, 20, 24
No. 51	12, 18, 14, 16, 18, 20, 24
No. 52	8, 10, 11, 12, 18, 14, 16, 18, 20
No. 53	8, 10, 11, 12, 18, 14, 16, 18, 20

PRICE LIST OF CUTTERS.

Single Point Cutters.

SIZE	50	51	52	53
Sharp V.	\$0.45	\$0.55	\$0.70	\$0.90
U. S. Stan'd	0.50	0.60	0.75	0.95
Whitworth	0.75	0.90	1.15	1.40

Chaser Cutters.

SIZE . . .	50	51	52	53
Sharp V.	\$0.90	\$1.05	\$1.20	\$1.30
U. S. Stan'd	0.90	1.05	1.20	1.30
Whitworth	1.25	1.40	1.65	1.80

NOTE—In ordering tools or cutters to cut Whitworth or U. S. Standard Threads be careful to specify pitch.

ARMSTRONG SELF-HARDENING STEEL

Sold in 3-ft. bars only

EVERY BAR IS CAREFULLY TESTED AND CARRIES ARMSTRONG BROS. TOOL CO.'S LABEL AND GUARANTEED

PRICE LIST

STEEL OF SIZE AND SHAPE SUITABLE FOR USE
IN ARMSTRONG TOOL HOLDERS.

Length	Size.	Price.	Size.	Price.
3 ft.	1 in. sq.	\$0.50	4x $\frac{1}{2}$ in.	\$0.85
8 "	1 " "	0.60	4x $\frac{1}{2}$ "	1.60
3 "	1 " "	0.85	7x $\frac{1}{2}$ "	2.10
8 "	1 " "	1.20	4x $\frac{1}{2}$ "	8.00
3 "	1/2 " "	1.65	4x $\frac{1}{2}$ "	4.20
3 "	1/2 " "	2.10	4x1 "	5.75
8 "	1/2 " "	3.00	4x1 "	
3 "	1/2 " "	4.50		

Price List—Bevel Rolled Steel. FOR USE IN ARMSTRONG CUTTING-OFF TOOLS.

NOTE—This steel is rolled to approximate width to fit ARMSTRONG CUTTING-OFF TOOLS but requires grinding on edges to bring to exact size.

Size of Steel	Fits Tools.	Length.	Price.
4x $\frac{1}{2}$ in.	No. 20 & 30	8 ft.	\$0.75
4x2 "	" 21 " 31	" "	1.00
4x1 "	" 22 " 32	" "	1.25
4x1 "	" 23 " 33	" "	1.60
4x1/2 "	" 24 " 34	" "	2.00
4x1/2 "	" 25 " 35	" "	2.75
4x1/2 "	" 26 " 36	" "	6.10

Armstrong Patent Tool Holders

ESPECIALLY ADAPTED FOR THE ECONOMICAL USE OF SELF-HARDENING STEEL.

ARMSTRONG CUTTING-OFF TOOLS

Patented November 14th, 1899.

In no other form of lathe tool is the proportion of cost of maintenance to effective work performed so great as in a Cutting-Off Tool. Therefore in no other form is the tool holder principle so effective or economical.

The Armstrong Cutting-Off Tool has already to a large extent displaced the solid forged tool and other crude and ill-designed tools heretofore on the market.

The Armstrong Cutting-Off Tools will cut off and keep right on cutting off.

They stand the racket of constant work and this is one of the chief points of difference between the genuine Armstrong Tool Holders and imitations of them.

The Holder and Bolts are made of steel and hardened. The Blades are made of special grade self-hardening steel, rolled beveled on both sides, giving the proper clearance to insure a clean cutting tool and requiring grinding on the cutting end only.

ARMSTRONG STRAIGHT SHANK



CUTTING-OFF TOOL.

Each tool is packed in a neat, substantial box and the following price includes one self-hardening steel blade and a drop forged wrench carefully fitted.

No.	SIZE HOLDER.	SIZE BLADE.	NET WEIGHT.	PRICE COMPLETE.	EXTRA BLADES.
20	$\frac{3}{8} \times 1 \times 5$ in.	$\frac{3}{8} \times \frac{1}{2} \times 5\frac{1}{2}$ in.	0 lb. 12 oz.	\$1.65	\$0.25 each.
21	$\frac{4}{8} \times 1 \times 6$ "	$\frac{1}{2} \times \frac{1}{2} \times 6\frac{1}{2}$ "	1 " 5 "	1.80	.35 "
22	$\frac{5}{8} \times 1 \frac{1}{2} \times 7$ "	$\frac{1}{2} \times \frac{1}{2} \times 7\frac{1}{2}$ "	2 " 2 "	2.30	.45 "
23	$\frac{6}{8} \times 1 \frac{1}{2} \times 8$ "	$\frac{3}{8} \times 1 \times 8\frac{1}{2}$ "	3 " 4 "	3.00	.60 "
24	$\frac{7}{8} \times 1 \frac{1}{2} \times 9$ "	$\frac{5}{8} \times 1 \frac{1}{2} \times 9\frac{1}{2}$ "	4 " 8 "	3.80	.75 "
25	$1 \times 1 \frac{1}{2} \times 10$ "	$\frac{1}{2} \times 1 \frac{1}{2} \times 10\frac{1}{2}$ "	6 " 8 "	4.75	.95 "
26	$1 \frac{1}{2} \times 2 \times 11$ "	$\frac{1}{2} \times 1 \frac{1}{2} \times 11\frac{1}{2}$ "	8 " 5 "	6.50	1.25 "

For some kinds of work a cutting off tool made "off-set" so that the blade is held at an angle to the shank, is more convenient to use than the regular straight shank tool. To meet the demand for a tool of this character we present the Armstrong Off-set Cutting-Off Tool. It will be found to possess all the merits of the straight shank tool and is equally as rigid. The blades are interchangeable with the straight shank tool of corresponding size.

ARMSTRONG OFF-SET



CUTTING-OFF TOOL.

Each tool is packed in a neat, substantial box, and the following price includes one self-hardening steel blade and a drop forged wrench carefully fitted.

No.	SIZE SHANK.	SIZE BLADE.	NET WEIGHT.	PRICE COMPLETE.	EXTRA BLADES.
30	$\frac{3}{8} \times 1$ in.	$\frac{3}{8} \times \frac{1}{2} \times 5\frac{1}{2}$ in.	1 lb. 0 oz.	\$1.65	\$0.25 each.
31	$\frac{4}{8} \times 1 \frac{1}{2}$ "	$\frac{1}{2} \times \frac{1}{2} \times 6\frac{1}{2}$ "	1 " 11 "	1.80	.35 "
32	$\frac{5}{8} \times 1 \frac{1}{2}$ "	$\frac{1}{2} \times \frac{1}{2} \times 7\frac{1}{2}$ "	2 " 9 "	2.30	.45 "
33	$\frac{6}{8} \times 1 \frac{1}{2}$ "	$\frac{3}{8} \times 1 \times 8\frac{1}{2}$ "	3 " 14 "	3.00	.60 "
34	$\frac{7}{8} \times 1 \frac{1}{2}$ "	$\frac{5}{8} \times 1 \frac{1}{2} \times 9\frac{1}{2}$ "	5 " 5 "	3.80	.75 "
35	$1 \times 1 \frac{1}{2}$ "	$\frac{1}{2} \times 1 \frac{1}{2} \times 10\frac{1}{2}$ "	7 " 12 "	4.75	.95 "
36	$1 \frac{1}{2} \times 2$ "	$\frac{1}{2} \times 1 \frac{1}{2} \times 11\frac{1}{2}$ "	9 " 11 "	6.50	1.25 "

Armstrong Patent Tool Holders

ESPECIALLY ADAPTED FOR THE ECONOMICAL USE OF SELF-HARDENING STEEL.

ARMSTRONG SPECIAL PLANER TOOL.

PATENT APPLIED FOR.



Fig. 1.



Fig. 2.

A Tool Holder for general work on planers and shapers.

This tool is pronounced by all who have seen or used it to be a money-saver.

It is a decided and practical extension of the Armstrong idea.

The shank is drop forged of steel and is case hardened.

The cutters are of self-hardening steel rectangular in shape and of stock sizes.

By means of grooved seats into which they are placed the cutters may be quickly adjusted to any desirable angle, and at the same time so locked into position as to render slipping impossible.

The Armstrong Planer Tool can be used either right or left hand (see Fig. 1) and when desirable or necessary, as for instance, when cutting a keyway, it may, by simply reversing the cutter and turning the tool around, be transformed into the equivalent of a "goose-neck" tool (see Fig. 2.)

One of these tools equipped with an assortment of properly ground cutters will effectively equal a complete set of solid forged planer tools.

Each tool is packed in a neat substantial box, and the following price includes two self-hardening steel cutters ground to shape and a drop forged wrench carefully fitted.

NO.	SIZE SHANK.	LENGTH.	SIZE CUTTER.	NET WEIGHT.	PRICE COMPLETE.	EXTRA CUTTERS.
40	$\frac{1}{2} \times 1$ inch	7 inch	$\frac{1}{2} \times \frac{3}{8}$ inch	2 lb 0 oz.	\$ 2.75	\$.20 ea.
41	$\frac{3}{8} \times 1\frac{1}{2}$, "	10 "	$\frac{3}{8} \times \frac{1}{2}$ "	4 " 11 "	4.50	.40 "
410	$\frac{3}{8} \times 1\frac{1}{2}$ "	10 "	$\frac{3}{8} \times \frac{1}{2}$ "	4 " 6 "	4.50	.40 "
42	$1\frac{1}{8} \times 1\frac{1}{2}$ "	13 "	$\frac{3}{8} \times \frac{1}{2}$ "	10 " 9 "	7.00	.70 "
43	$1\frac{1}{8} \times 1\frac{1}{2}$ "	16 "	$\frac{3}{8} \times \frac{1}{2}$ "	18 " 13 "	11.00	1.00 "
44	$1\frac{1}{8} \times 2$ "	20 "	$\frac{3}{8} \times 1$ "	32 " 8 "	16.00	2.00 "

ARMSTRONG TOOL HOLDER SETS.

The Armstrong Tool Holder Set No. A.O.



The Armstrong Combination Set No. 80.



THIS SET is especially adapted for use by Electricians, Model Makers, Bicycle Makers and Amateur Machinists. It consists of one No. 0 Tool Holder, one drop forged wrench and nine ground and finished cutters made of Armstrong special self-hardening steel, assorted points. Put up in polished hardwood case. Weight complete 1 lb. 2 oz. Price, \$3.00

THIS SET comprises a complete equipment for turning, planing and boring; it consists of one No. 8 boring tool with wrench and six cutters; one No. 0 lathe and shaper tool holder with six assorted cutters and wrench and one piece of Armstrong special self-hardening steel 9 in. long. Put up in polished hardwood case. Weight complete 3 lbs 9 oz. Price, \$7.00

Armstrong Patent Tool Holders

ESPECIALLY ADAPTED FOR THE ECONOMICAL USE OF SELF-HARDENING STEEL.

These Tool Holders are rapidly displacing the old fashioned forged tools and are now used in most progressive machine shops.

THE saving effected by these tool holders in time, money, labor and annoyance can hardly be over-estimated. They obviate all danger of steel being burned or worked badly. They save the men from going to the tool dresser, machines standing idle, etc. With them no stock of heavy steel need be carried, and many points of various shapes can be kept on hand, ready for instant use, which will take up but little room and enable the men to turn out more and better work.

Their Points of Merit



Straight Tool, turning.
Note perfect clearance.



Right Hand Off-set Tool,
boring.

Forging and tempering are entirely dispensed with and grinding is reduced to a minimum.

The points can be ground to any desired shape or clearance and can always be kept at the same height.

As there are no side projections they can be used close into a corner.

The make of the cutter is such that it takes a clean curling chip from wrought iron or steel. No top grinding being necessary.

There is absolutely no slip to the cutter; it is supported directly under the strain of the cut, and will do as heavy work as any forged tool of same size.

One pound of tool steel used in these holders equals ten pounds in the ordinary tool.



Right and Left Hand
Off-set Tools, turning.



Straight Tool, planing.
No side projections.

ARMSTRONG STRAIGHT SHANK



TOOL
HOLDER

Each tool is packed in a neat substantial box and the following price includes three self-hardening steel cutters (ground to shape) and a drop forged wrench carefully fitted.

NO.	SIZE HOLDER.	SIZE CUTTER.	NET WEIGHT.	PRICE COMPLETE.	EXTRA CUTTERS.
0	$\frac{3}{8} \times \frac{3}{8} \times 5$ in	$\frac{3}{8}$ in. sq	0 lb 8 oz	\$ 1.65	\$0.12 each.
1	$\frac{3}{8} \times 1 \times 6$ "	$\frac{3}{8}$ in. sq	1 " 0 "	1.80	.15 "
2	$\frac{3}{8} \times 1 \frac{1}{2} \times 7$ "	$\frac{3}{8}$ in. sq	1 " 12 "	2.80	.22 "
3	$\frac{3}{8} \times 1 \frac{1}{2} \times 8$ "	$\frac{3}{8}$ in. sq	2 " 10 "	3.00	.30 "
4	$\frac{3}{8} \times 1 \frac{1}{2} \times 9$ "	$\frac{3}{8}$ in. sq	3 " 12 "	3.80	.40 "
5	$1 \frac{1}{8} \times 1 \frac{1}{2} \times 10$ "	$\frac{3}{8}$ in. sq	5 " 5 "	4.75	.50 "
6	$1 \frac{1}{8} \times 2 \times 12$ "	$\frac{3}{8}$ in. sq	9 " 6 "	7.00	.75 "
7	$1 \frac{1}{8} \times 2 \frac{1}{2} \times 16$ "	$\frac{3}{8}$ in. sq	18 " 6 "	12.00	1.50 "

ARMSTRONG OFF-SET TOOL HOLDER

Each tool is packed in a neat substantial box and the following price includes two self-hardening steel cutters (ground to shape) and a drop forged wrench carefully fitted

NO. RIGHT OR LEFT.	SIZE HOLDER.	SIZE CUTTER.	NET WEIGHT.	PRICE COMPLETE.	EXTRA CUTTERS.
0	$\frac{3}{8} \times \frac{3}{8} \times 6$ in	$\frac{3}{8}$ in. sq.	0 lb. 12 oz.	\$ 1.65	\$0.12 each.
1	$\frac{3}{8} \times 1 \times 8$ "	$\frac{3}{8}$ in. sq.	1 " 6 "	1.80	.15 "
2	$\frac{3}{8} \times 1 \frac{1}{2} \times 9$ "	$\frac{3}{8}$ in. sq.	2 " 5 "	2.80	.22 "
3	$\frac{3}{8} \times 1 \frac{1}{2} \times 10$ "	$\frac{3}{8}$ in. sq.	3 " 6 "	3.00	.30 "
4	$\frac{3}{8} \times 1 \frac{1}{2} \times 11$ "	$\frac{3}{8}$ in. sq.	5 " 0 "	3.80	.40 "
5	$1 \frac{1}{8} \times 1 \frac{1}{2} \times 12$ "	$\frac{3}{8}$ in. sq.	6 " 14 "	4.75	.50 "
6	$1 \frac{1}{8} \times 2 \times 15$ "	$\frac{3}{8}$ in. sq.	11 " 3 "	7.00	.75 "
7	$1 \frac{1}{8} \times 2 \frac{1}{2} \times 20$ "	$\frac{3}{8}$ in. sq.	22 " 8 "	12.00	1.50 "

NOTE—In ordering always specify whether Right or Left hand is wanted.